

AVIATION AND AERONAUTICAL ENGINEERING

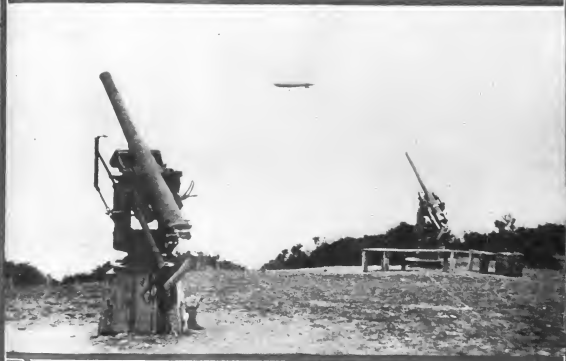


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Anti-Aircraft Guns and a Blimp Guarding a Coast Line

JULY
1st
1917

SPECIAL FEATURES

GLUE FOR USE ON AIRPLANES
THE UNION AIRPLANE ENGINE
THREE OF OUR NEW ARMY FIELDS
ALLOWANCES FOR BENDING SHEET METAL
SPARK CAPS IN SERIES WITH SPARK PLUGS
A FRENCH AVIATOR'S MESSAGE TO AMERICA
COURSE IN AERODYNAMICS AND AIRPLANE DESIGN
THE POWER PLANT FROM THE CONSIDERATION OF AIRPLANE
PERFORMANCE

PRICE
Fifteen
Cents

PUBLISHED SEMI-MONTHLY
BY
THE GARDNER, MOFFAT CO., Inc.
120 W. 32nd ST. NEW YORK



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Area of about 100,000 feet



Factory No. 2, built in 1913
Area of about 100,000 feet



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Factory No. 3, built in 1914
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Supplies to U. S. Army and Navy



STANDARD CO. INCORPORATED
PLANT PLAINFIELD, NEW JERSEY

Member Aircraft Manufacturers
Association Inc.



Group of Engineers in Third Department, Eastern & Atlantic Loan Address
by President Wright

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in a factory designed
especially for the
manufacture of
aircraft*



*Manufacturers to
Army and Navy.
Member of
Aircraft Manu-
facturers' Associ-
ation, Inc.
New York Office
Times Building*



Contractors to U.S. Army and Navy

THOMAS-MORSE AIRCRAFT CORPORATION
ITHACA, N.Y. U.S.A.

Member Aircraft Manufacturers Association

JULY 1, 1917

AVIATION AND AERONAUTICAL ENGINEERING

VOL. II. NO. 11

Member of the Associated Business Papers

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TECHNICAL EDITOR
LUTHER D. SANDERS
MANAGER
J. H. PHILLIP J. HOOVER
Associate Editor: J. H. HOOVER, C. E. A.

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TECHNICAL EDITOR
A. C. L. SMITH, A. C. S. I., R. N. S. M.
Associate Editor: J. H. HOOVER, C. E. A.
Managing Editor: J. H. HOOVER, C. E. A.

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July 1, 1917

No. 11

THE Senate Committee on Military Affairs, which has been holding hearings on the bill to create a separate department of Aeronautics with a separate office at its head, has received the opinion of the Secretary of War and the Secretary of the Navy. It is apparent from the statement of the Committee that the plan will not be passed at this time but will await the hearings on the appropriation bill now being prepared by both the Army and the Navy.

The Army bill aside from calling for an expenditure of about \$6,000,000,000 for an air service for the Army will probably contain an organization plan for the expanded service. The expenditure of this appropriation will call for a service of a total hundred thousand of men and enlisted men. It is to be hoped that the bill will give the American Air Service a sufficient number of officers of high rank. A service that will be almost five times the size of the whole U. S. Army as a peace time will need many officers of superior executive ability.

The Navy has not as yet given any indication as to its plan or wishes. There has seemed to be very little attention given to the great problem of naval aeronautics by the Government. Possibly as it is today is not worthy of its position as the chief aviation center of the Navy. Admiral Taylor, who is a member of the Aircraft Production Board, has the fact concerning the development abroad and the country is relying on his great ability to present a program of naval expansion which will make the Navy of definite assistance to our Allies.

Up to now its planning for the development of our aircraft has been in the hands of Army and Navy officials and the Aircraft Production Board. It is expected that their recommendations will be made early in July. The Senate will then act on Congress. Up to last August Congress had been unwilling to appropriate any substantial sum for aeronautics, but now that it has practically given the sums requested by the Army and Navy. Now, with the public alive to the needs of our Allies, and with them looking to us for the most service we can render in this war, Congress will probably follow the best advice it can receive and establish an air service which will be able to deal a decisive blow for democracy.

Orders to Manufacturers

The significant fact of the meeting of the Society of Automotive Engineers in Washington which seven hundred large manufacturers attended was that the automobile industry was looking to the aircraft maker to make up for any falling off of the use of pleasure cars.

Senator at Washington has it that a man prominent in the automobile world and with full knowledge of the probable needs of the Government has stated that within six months the steel and mechanical equipment now being used to build automobiles will have to be diverted to the manufacture of motor trucks, airplane engines and other military and naval equipment.

If this is true it is but natural that automobile manufacturers are already alive to the present situation. Arrangements are under way to utilize some of the largest plants in the country for the production of important parts of aircraft. Motors and generators are ordered from a leading machine company. fittings from a stock register organization, while no course of all kinds will be sought from manufacturers who are able to turn their mechanical equipment to this purpose.

Through the present arrangement the final assembly of the airplanes will be under the supervision of the present constructors who know the intricacies of aircraft. It is to be hoped that the industry will meet the national emergency with the skill it has already shown.

Our Aviators Abroad

The announcements of the arrival of American aviators abroad have been rather misleading if the public assumes that these representatives of our flying services are all trained fliers.

We cannot go into details as to the particular purposes for which these aviator groups were sent but the announcement of the landing of "one hundred naval aviators" is more inspiring than accurate.

If it is desired that publications suppress all news of the movement of troops it is to be hoped that such news as is given out will be authentic and correct.

The Patent Situation

The National Advisory Committee for Aeronautics is expected to make an announcement in a short time regarding the work accomplished by the Sub Committee on Patents.

From all the information available at this time it appears that the committee has reached a satisfactory solution of this complicated and important problem. Substantial recognition has been given to the valuable work of the Wrights, Glenn Curtiss, Burgess and Glenn Harter.

When the final decision has been made on this matter, which has been pending so long, the whole industry will feel inclined to the National Advisory Committee for handling this question without the tedious delay which court proceedings would have involved.

The Power Plant from the Consideration of Airplane Performance

By Donald W. Douglas

Aeronautical Engineer, S&T

The question of the power of the engine which will best give the performance desired for each specified class of a military airplane is one which has been subject recently to criticism, in particular, by those developing engines. For the question has not confronted the designer in this country, for his class of engines is limited by the small number available.

An attempt will be made here to indicate in general the most suitable power to be employed in military machines of various classes, i.e., the machine cannot machine and the two plane requirements, or landing machine.

One-Plane General Machine Characteristics

Objective: One for Military
Class: General
Type of engine and power wings equal
Power at sea level
Power at 10,000 ft
Power at 20,000 ft
Power at 30,000 ft
Power at 40,000 ft
Power at 50,000 ft
Power at 60,000 ft
Power at 70,000 ft
Power at 80,000 ft
Power at 90,000 ft
Power at 100,000 ft

Requirements

250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1050, 1100, 1150, 1200, 1250, 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700, 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950, 5000, 5050, 5100, 5150, 5200, 5250, 5300, 5350, 5400, 5450, 5500, 5550, 5600, 5650, 5700, 5750, 5800, 5850, 5900, 5950, 6000, 6050, 6100, 6150, 6200, 6250, 6300, 6350, 6400, 6450, 6500, 6550, 6600, 6650, 6700, 6750, 6800, 6850, 6900, 6950, 7000, 7050, 7100, 7150, 7200, 7250, 7300, 7350, 7400, 7450, 7500, 7550, 7600, 7650, 7700, 7750, 7800, 7850, 7900, 7950, 8000, 8050, 8100, 8150, 8200, 8250, 8300, 8350, 8400, 8450, 8500, 8550, 8600, 8650, 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THREE OF OUR NEW FLYING FIELDS

The above pictures show the progress that is being made in the development of flying fields, which the Army has under construction. The top picture shows Selfridge Field, at Mt. Clemens, Mich., which was the first flying field in this country, and who was the first army officer to use it as a flying field, in October, 1907. The middle picture shows the new flying field at Chanute, Kan., which was the first flying field for the Army, and who was the first army officer to use it as a flying field, in October, 1907. The bottom picture shows the new flying field at Chanute, Kan., which was the first flying field for the Army, and who was the first army officer to use it as a flying field, in October, 1907.

SELFBRIDGE, WILBUR WRIGHT AND CHANUTE

Regulations for the Prevention of Dope Poisoning

The Aircraft Manufacturers' Association has received the following from the New York State Department of Labor:

"The following recommendations will be embodied in our report of the airplane industry, which has recently been instituted—in which we made a study relative to the prevention of poisoning from material contained in the dope of a variable nature.

"In airplane factories where dope is used a downward system of ventilation should be installed, which to be located at floor level, which should be located about six feet apart beneath working areas.

"Laying of wings, ailerons and rudders to be done in a room separate and apart from dope room.

"When the body is doped it should be done in proximity to a downward system of ventilation.

"Each morning and afternoon should be interrupted by a fifteen-minute rest period, more to go into one room air during such time.

"Hot running water, soap and radiator towels, also towels should be provided for all dope workers.

"Lockers should be provided for all dope workers, which should be well ventilated.

"No eating shall be permitted in the dope room.

"No man who one hour shall be allowed as a touch period to two workers engaged in the process of dopping.

"Active medical supervision, as well as diagnosis of dope poisoning previous and after effects.

"No dopping shall be conducted in the open air unless it is done under a glass so as to prevent rapid evaporation of the poisonous fumes.

"Any worker who complains of dizziness or sleepiness should be immediately removed from the work for forty-eight hours.

"For your information, I desire to say that in the above recommendations, we have in mind certain relative to providing proper ventilation, installation of hot water, in addition to this instructions have been given to persons in the respective plants as to how such orders should be carried out. In the event of plants to be fixed hereafter, these recommendations should be carefully carried out."

Air Supermacy Diminished

In a discussion of British new super-



AN INTERVIEW PROGRAMMER FROM THE AERIAL (1934) ON A BOMBING.

On the western front, Claude Lorraine White and Harry Harper were in several points of interest in several conversations. One is the standard use of air craft which has been widely spread, but which means Graham White and Harper can older impossible. Another point is speed, which would be some rapid be sufficient to maintain in the air. What they say be concerned as an advance.

Standardized in war machines is not yet possible. Types are changing too rapidly. The future, it happens sometimes that, for a certain time, one or other of the adaptations has a feeling machine which is a little better than one of a slightly greater speed, than the machine of a corresponding type by which it is supposed. Both machines are practically impossible. And it is also some or less possible that in our air service of the future and in our army it also there should be craft of a more or less obsolete type which we should be able to improve or we could, but which should be discarded until machines are in hand of a newer and better type.

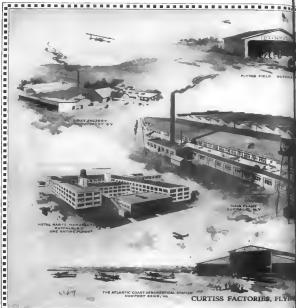
The demand for aircraft has from the beginning of the war almost exceeded the supply—more than the life has been, or (referred) and this to the reason why in their own side and the other has been able to obtain a small or unimportant in quantity. We could see such a constant if we had a sufficient proportion to maintain and performed. We need a greater numerical superiority over the enemy, both in numbers and in quality. We need not make progress time in working to design or construct one ideal type of aircraft. What we must do is to turn out the best machine obtainable today in such quantities that, though some of them



A VIEW OF THE AVIATION SCHOOL AT HIGHTSTOWN, N.J. ACTING CAPT. HARRY (WHITE) AND FORMERLY HARTMAN THE SCHOOL, OVER 100 CAPT. WILLIAM E. HARTMAN, ONE MANAGER OF THIS FIRST NAVAL AVIATION

Courtesy

THE CURTIS AIRCRAFT COMPANY, BUREAU, N. Y.
Member Aircraft Manufacturers' Association, Inc.
America Trust Company, 210 Madison Ave., New York City New York Agents



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Prices will be quoted on application.

Patented Nov. 26, 1916. Other patents pending.

THE MOTO-METER CO., Inc.
 Long Island City N. Y.

FEATURES

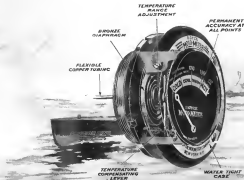
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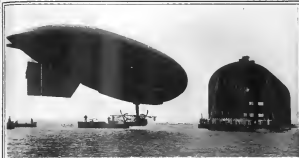


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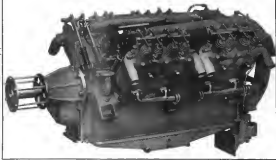
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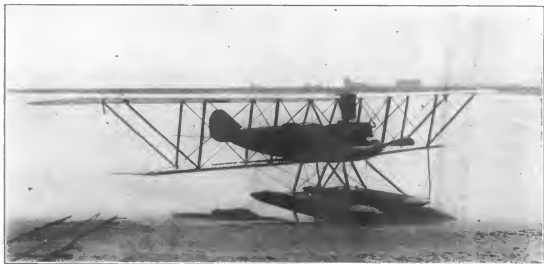
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